

A<sup>2</sup> operating the compressor or vacuum pump at least partially with the recovered energy to provide at least one feed stream to the fuel cell.

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A<sup>3</sup> 79. (Once amended) The system according to claim 76, wherein the alkali-promoted material is selected from alumina impregnated with potassium carbonate, hydrotalcite promoted with potassium carbonate, and mixtures thereof.

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Please add the following new claims:

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A<sup>4</sup> --80. (New) The system according to claim 1, wherein the hydrogen gas separation system comprises a pressure swing adsorption module operating at a temperature greater than ambient temperature.

81. (New) The system according to claim 1, wherein the hydrogen gas separation system comprises a pressure swing adsorption module operating at about ambient temperature to about 1000°C.

82. (New) The system according to claim 81, wherein the pressure swing adsorption module operates at about ambient temperature to about 200°C.

83. (New) The system according to claim 81, wherein the pressure swing adsorption module operates at about 450°C to about 1000°C.

84. (New) The system according to claim 81, wherein the pressure swing adsorption module operates at about 250°C to about 800°C.

85. (New) The system according to claim 84, wherein the pressure swing adsorption module comprises a first adsorbent and a second adsorbent.

86. (New) The system according to claim 85, wherein the first adsorbent preferentially adsorbs carbon dioxide.

87. (New) The system according to claim 1, wherein the hydrogen gas separation system comprises a pressure swing adsorption module operating at about 150°C to about 800°C.